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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,270	11/13/2003	Mitsuru Ikeda	1538.1042	5657

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EXAMINER

RODRIGUEZ, PAUL L

ART UNIT	PAPER NUMBER
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2125

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

HL

Office Action Summary	Application No.	Applicant(s)	
	10/706,270	IKEDA ET AL.	
	Examiner	Art Unit	
	Paul L Rodriguez	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/13/03</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

1. Claims 1-15 are presented for examination.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. See specification page 4 lines 20-23.

Specification

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because of the term “means”. Correction is required. See MPEP § 608.01(b).

5. The disclosure is objected to because of the following informalities:

Page 1 line 12 states “...time, in manufacturing specialized in the metal mold...”, awkward language, recommend removing the first “in”.

Page 1 lines 33-34 states “...operators and wall against...”, awkward language.

Page 2 line 32 states “betweenthe”, typo.

Page 8 line 14 states “tool track display function 207”, previously and in figure 2 states “tool path display function”, reference to the same elements should remain consistent to avoid any possible confusion.

Page 8 line 22 refers to “NC data generation function 207”, previously 206.

Appropriate correction is required.

Claim Objections

6. Claims 1-15 are objected to because of the following informalities:

Claims 1-15 are objected to for their use of acronyms. While CAD, CAM and NC are acronyms well known in the art and the specification does provide a definition for each, the use of an acronym in the claim without defining in the claim could render the claim indefinite.

Claim 5 line 4 states “said measured work model”, previously “said measured work geometric model”, reference to the same limitations should remain consistent to avoid any possible confusion or antecedent problems.

Art Unit: 2125

Claim 10 line 4 states “said measured work model”, previously “said measured work geometric model”, reference to the same limitations should remain consistent.

Claim 11 line 6 states “...geometric model said CAD model”, appears to be missing the word “and” as was used in claims 1 and 6.

Claim 15 line 4 states “said measured work model”, previously “said measured work geometric model”, reference to the same limitations should remain consistent.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 2, 7 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claim 2 recites the limitation "said cutting margin" in line 3. There is insufficient antecedent basis for this limitation in the claim. Previously “cutting margin model generating means” and “a cutting margin model”, however there was no previous recitation to “a cutting margin”.

10. Claim 7 recites the limitation "said cutting margin" in line 3. There is insufficient antecedent basis for this limitation in the claim. Previously "generating a cutting margin model" and "a cutting margin model", however there was no previous recitation to "a cutting margin".

11. Claim 12 recites the limitation "said cutting margin" in line 3. There is insufficient antecedent basis for this limitation in the claim. Previously "generating a cutting margin model" and "generated cutting margin model", however there was no previous recitation to "a cutting margin".

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. Claims 1-4, 6-9 and 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Maeda et al (U.S. Pat 5,796,618). The claimed invention reads on Maeda et al as follows:

Maeda et al discloses a CAM system, program (figure 1, 2) and method (abstract) comprising an NC apparatus for machining a work according to NC data (reference number 18, abstract), cutting margin model generating means (reference number 20) for obtaining a CAD model that is solid model data of a metal mold to be made (reference number 12, col. 72 line 64

Art Unit: 2125

– col. 73 line 3) and a measured work geometric model that is geometric model data of said work, which is obtained by measuring said work to be machined (reference number 11, col. 73 lines 4-21) and generating a cutting margin model that is a difference between said measured work geometric model and said CAD model (reference number 14, col. 73 lines 10-46, col. 31 line 5 – col. 32 line 53) and NC data generating means for generating NC data based on the generated cutting margin model (reference number 17, col. 30 lines 20-30), wherein said NC data generating means generates NC data to machine said work by a predetermined cutting depth at a portion in which said cutting margin exists (col. 31 line 65 – col. 32 line 11) and NC data to cause a tool to move without machining at a portion in which said cutting margin does not exist (considered inherent, the NC data causes the tool to move whether cutting the workpiece or not), further comprising means for measuring a tool form in a state in which said tool is installed to said NC apparatus, and generating a tool model, and wherein said NC data generating means generates said NC data based on both of said cutting margin model and said tool model (figures 32-45, col. 52 line 5 – col. 57 line 28), further comprising means for outputting an instruction so as to move a tool in either of a tool axis direction and a Z-axis direction, to said NC apparatus, according to a tool load state informed from said NC apparatus (col. 55 lines 13-27). Examiner would like to point out that any reference to specific figures, columns and lines should not be considered limiting in any way, the entire reference is considered to provide disclosure relating to the claimed invention.

14. Claims 1-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Richey (U.S. Pub 2003/0033041). The claimed invention reads on Richey as follows:

Richey discloses a CAM system (figure 1), program (paragraph 5) and method (paragraph 1) comprising an NC apparatus for machining a work according to NC data (reference number 22), cutting margin model generating means (reference number 36) for obtaining a CAD model that is solid model data of a metal mold to be made (reference number 12) and a measured work geometric model that is geometric model data of said work (reference number 40), which is obtained by measuring said work to be machined (reference number 18), and generating a cutting margin model that is a difference between said measured work geometric model and said CAD model (paragraph 46-48), and NC data generating means for generating NC data based on the generated cutting margin model (paragraph 45, 48, 51), wherein said NC data generating means generates NC data to machine said work by a predetermined cutting depth at a portion in which said cutting margin exists and NC data to cause a tool to move without machining at a portion in which said cutting margin does not exist (paragraph 40, 61, positioning and optimizing done prior to machining therefore predetermined, also considered to be inherent because the cutting program is predetermined and the tool will cut at a depth that is predetermined, also the NC data causes the tool to move, both during cutting and when not cutting), further comprising means for measuring a tool form in a state in which said tool is installed to said NC apparatus, and generating a tool model (paragraph 55-57) and wherein said NC data generating means generates said NC data based on both of said cutting margin model and said tool model (paragraph 61), further comprising means for outputting an instruction so as to move a tool in either of a tool axis direction and a Z-axis direction, to said NC apparatus, according to a tool load state informed from said NC apparatus (paragraph 42, inherent to dynamic control), further comprising storing means for storing data informed from said NC

Art Unit: 2125

apparatus as monitoring data (real time monitoring, paragraphs 15, 25, 29, 54, 56, 57, 59, 60) and means for displaying said measured work model, which is colored based on load data in said monitoring data stored by said storing means (paragraph 60). Examiner would like to point out that any reference to specific figures, columns and lines should not be considered limiting in any way, the entire reference is considered to provide disclosure relating to the claimed invention.

15. Claims 1-4, 6-9 and 11-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Matsumiya et al (U.S. Pat 6,671,571). The claimed invention reads on Matsumiya et al as follows:

Matsumiya et al discloses a CAM system (figure 1), program (abstract) and method (col. 1 lines 6-12), comprising an NC apparatus (reference number 25) for machining a work (reference number 30) according to NC data (col. 4 lines 35-51), cutting margin model generating means (reference number 20) for obtaining a CAD model that is solid model data of a metal mold to be made ("final work piece shape", col. 4 lines 3-5, col. 7 lines 11-17) and a measured work geometric model that is geometric model data of said work, which is obtained by measuring said work to be machined ("blank shape" col. 4 lines 57-65), and generating a cutting margin model that is a difference between said measured work geometric model and said CAD model (reference number 22, 33, col. 5 line 16 – col. 6 line 13) and NC data generating means for generating NC data based on the generated cutting margin model (reference number 20), wherein said NC data generating means generates NC data to machine said work by a predetermined cutting depth at a portion in which said cutting margin exists (col. 4 lines 11-26), and NC data to cause a tool to move without machining at a portion in which said cutting margin

Art Unit: 2125

does not exist (Considered inherent, NC program provides movement commands to the tool whether cutting or not), further comprising means for measuring a tool form in a state in which said tool is installed to said NC apparatus (reference number 21C), and generating a tool model (col. 10 lines 14-31), and wherein said NC data generating means generates said NC data based on both of said cutting margin model and said tool model (col. 10 lines 32-48), further comprising: means for outputting an instruction so as to move a tool in either of a tool axis direction and a Z-axis direction, to said NC apparatus (col. 4 lines 35-51), according to a tool load state informed from said NC apparatus (reference number 29). Examiner would like to point out that any reference to specific figures, columns and lines should not be considered limiting in any way, the entire reference is considered to provide disclosure relating to the claimed invention.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Miyazaki et al (U.S. Pat 6,804,568) – teaches a 3D CAD apparatus that incorporates color attributes to provide easier recognition of certain elements.

Liasi et al (U.S. Pat 6,738,507) – teaches combining a CAD design with an electronic image of a part (considered a model) to develop a set of data that defines the differences (considered a model).

Matsumoto et al (U.S. Pat 6,597,968) – teaches a numeric control apparatus that optimizes speed of a cutting tool taking into consideration cutting and non-cutting information.

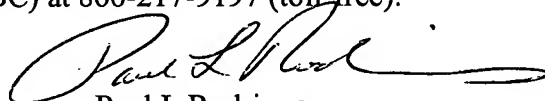
Art Unit: 2125

Wang (U.S. Pat 4,833,617) – teaches adaptive feed rate control for an NC apparatus that inputs "workpiece" and "part design" into a solid modeler, simulates in process workpiece machining and controls feed rate according to cutting and tool characteristics so as not to violate constraints.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul L Rodriguez whose telephone number is (571) 272-3753. The examiner can normally be reached on 6:00 - 4:30 T-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paul L Rodriguez
Primary Examiner
Art Unit 2125

PLR
3/18/05